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THE PHILOSOPHY OF BERGSON.[1]

I.

THE classification of philosophies is effected, as a rule, either by their methods or by their results: "empirical" and "*a priori*" is a classification by methods, "realist" and "idealist" is a classification by results. An attempt to classify Bergson's philosophy in either of these ways is hardly likely to be successful, since it cuts across all the recognized divisions.

But there is another way of classifying philosophies, less precise, but perhaps more helpful to the non-philosophical; in this way, the principle of division is according to the predominant desire which has led the philosopher to philosophize. Thus we shall have philosophies of feeling, inspired by the love of happiness; theoretical philosophies, inspired by the love of knowledge; and practical philosophies, inspired by the love of action.

Among philosophies of feeling we shall place all those which are primarily optimistic or pessimistic, all those that offer schemes of salvation or try to prove that salvation is impossible; to this class belong most religious philosophies. Among theoretical philosophies we shall place most of the great systems; for though the desire for knowledge is rare, it has been the source of most of what is best in philosophy. Practical philosophies, on the other hand, will be those

[1] The abbreviations of the titles of the works of M. Bergson referred to are: *C. E., Creative Evolution; M. and M., Matter and Memory; T and F. W., Time and Free Will.* The references are to the English translations of M. Bergson's books.

which regard action as the supreme good, considering happiness an effect and knowledge a mere instrument of successful activity. Philosophies of this type would have been common among Western Europeans if philosophers had been average men; as it is, they have been rare until recent times, in fact their chief representatives are the pragmatists and M. Bergson. In the rise of this type of philosophy we may see, as M. Bergson himself does, the revolt of the modern man of action against the authority of Greece, and more particularly of Plato; or we may connect it, as Dr. Schiller apparently would, with imperialism and the motor-car. The modern world calls for such a philosophy, and the success which it has achieved is therefore not surprising.

M. Bergson's philosophy, unlike most of the systems of the past, is dualistic: the world, for him, is divided into two disparate portions, on the one hand life, on the other matter, or rather that inert something which the intellect views as matter. The whole universe is the clash and conflict of two opposite motions: life, which climbs upward, and matter, which falls downward. Life is one great force, one vast vital impulse, given once for all from the beginning of the world, meeting the resistance of matter, struggling to break a way through matter, learning gradually to use matter by means of organization; divided by the obstacles it encounters into diverging currents, like the wind at the street-corner; partly subdued by matter through the very adaptations which matter forces upon it; yet retaining always its capacity for free activity, struggling always to find new outlets, seeking always for greater liberty of movement amid the opposing walls of matter.

Evolution is not primarily explicable by adaptation to environment; adaptation explains only the turns and twists of evolution, like the windings of a road approaching a town through hilly country. But this simile is not quite

adequate; there is no town, no definite goal, at the end of the road along which evolution travels. Mechanism and teleology suffer from the same defect: both suppose that there is no essential novelty in the world. Mechanism regards the future as implicit in the past, since it believes the future to be calculable; teleology also, since it believes that the end to be achieved can be known in advance, denies that any essential novelty is contained in the result.

As against both these views, though with more sympathy for teleology than for mechanism, M. Bergson maintains that evolution is truly *creative*, like the work of an artist. An impulse to action, an undefined want, exists beforehand, but until the want is satisfied it is impossible to know the nature of what will satisfy it. For example, we may suppose some vague desire in sightless animals to be able to be aware of objects before they were in contact with them. This led to efforts which finally resulted in the creation of eyes. Sight satisfied the desire, but could not have been imagined beforehand. For this reason, evolution is unpredictable, and determinism cannot refute the advocates of free will.

This broad outline is filled in by an account of the actual development of life on the earth. The first division of the current was into plants and animals: plants aimed at storing up energy in a reservoir, animals aimed at using energy for sudden and rapid movements. "The same impetus," he says, "that has led the animal to give itself nerves and nerve centers must have ended, in the plant, in the chlorophyllian function" (*C. E.*, p. 120). But among animals, at a later stage, a new bifurcation appeared: *instinct* and *intellect* became more or less separated. They are never wholly without each other, but in the main intellect is the misfortune of man, while instinct is seen at its best in ants, bees, and Bergson. The division between intellect and instinct is fundamental in his philosophy, much

of which is a kind of Sandford and Merton, with instinct as the good boy and intellect as the bad boy.

Instinct at its best is called *intuition.* "By *intuition,*" he says, "I mean instinct that has become disinterested, selfconscious, capable of reflecting upon its object and of enlarging it indefinitely" (*C. E.,* p. 186). The account of the doings of intellect is not always easy to follow, but if we are to understand Bergson we must do our best.

Intelligence or intellect, "as it leaves the hands of nature, has for its chief object the inorganic solid" (*C. E.,* p. 162); it can only form a clear idea of the discontinuous and the immobile (pp. 163-4); its concepts are outside each other like objects in space, and have the same stability (p. 169). The intellect separates in space and fixes in time; it is not made to think evolution, but represent *becoming* as a series of states (p. 171). "The intellect is characterized by a natural inability to understand life" (p. 174); geometry and logic, which are its typical products, are strictly applicable to solid bodies, but elsewhere reasoning must be checked by common sense, which, as Bergson truly says, is a very different thing (p. 170). Solid bodies, it would seem, are something which mind has created on purpose to apply intellect to them, much as it has created chess-boards in order to play chess on them. The genesis of intellect and the genesis of material bodies, we are told, are correlative: both have been developed by reciprocal adaptation (p. 196). "An identical process must have cut out matter and the intellect, at the same time, from a stuff that contained both" (p. 210).

This conception of the simultaneous growth of matter and intellect is ingenious, and deserves to be understood. Broadly, I think, what is meant is this: Intellect is the power of seeing things as separate one from another, and matter is that which is separated into distinct things. In reality there are no separate solid things, only an endless

stream of becoming, in which nothing becomes and there is nothing that this nothing becomes. But becoming may be a movement up or a movement down: when it is a movement up it is called life, when it is a movement down it is what, as misapprehended by the intellect, is called matter. I suppose the universe is shaped like a cone, with the Absolute at the vertex, for the movement up brings things together, while the movement down separates them, or at least seems to do so. In order that the upward motion of mind may be able to thread its way through the downward motion of the falling bodies which hail upon it, it must be able to cut out paths between them; thus as intelligence was formed, outlines and paths appeared (p. 199), and the primitive flux was cut up into separate bodies. The intellect may be compared to a carver, but it has the peculiarity of imagining that the chicken always was the separate pieces into which the carving-knife divides it.

"The intellect," Bergson says, "always behaves as if it were fascinated by the contemplation of inert matter. It is life looking outward, putting itself outside itself, adopting the ways of inorganized nature in principle, in order to direct them in fact" (p. 170). If we may be allowed to add another image to the many by which Bergson's philosophy is illustrated, we may say that the universe is a vast funicular railway, in which life is the train that goes up, and matter is the train that goes down. The intellect consists in watching the descending train as it passes the ascending train in which we are. The obviously nobler faculty which concentrates its attention on our own train, is instinct or intuition. It is possible to leap from one train to the other; this happens when we become the victims of automatic habit, and is the essence of the comic. Or we can divide ourselves into parts, one part going up and one down; then only the part going down is comic. But intellect is not itself a descending motion, it is merely an

observation of the descending motion by the ascending motion.

Intellect, which separates things, is, according to Bergson, a kind of dream; it is not *active,* as all our life ought to be, but purely contemplative. When we dream, he says, our self is scattered, our past is broken into fragments (p. 212),[2] things which really interpenetrate each other are seen as separate solid units: the extra-spatial degrades itself into spatiality (p. 218), which is nothing but separateness. Thus all intellect, since it separates, tends to geometry, and logic, which deals with concepts that lie wholly outside each other, is really an outcome of geometry, following the direction of materiality (pages 222-4). Both deduction and induction require spatial intuition behind them (p. 225); "the movement at the end of which is spatiality lays down along its course the faculty of induction, as well as that of deduction, in fact, intellectuality entire." It creates them in mind, and also the order in things which the intellect finds there (p. 228). Thus logic and mathematics do not represent a positive spiritual effort (p. 224), but a mere somnambulism, in which the will is suspended, and the mind is no longer active. Incapacity for mathematics is therefore a sign of grace—fortunately a very common one.

As intellect is connected with space, so instinct or intuition is connected with time. It is one of the noteworthy features of Bergson's philosophy that, unlike most writers, he regards time and space as profoundly dissimilar. Space, the characteristic of matter, arises from a dissection of the flux which is really illusory, useful, up to a certain point, in practice, but utterly misleading in theory. Time, on the contrary, is the essential characteristic of life or mind. "Wherever anything lives," he says, "there is, open some-

[2] It is noteworthy that elsewhere Bergson speaks of dreams as giving us duration more pure than in waking life (*T. and F. W.,* p. 126).

where, a register in which time is being inscribed" (*C. E.*, p. 17). But the time here spoken of is not mathematical time, the homogeneous assemblage of mutually external instants. Mathematical time, according to Bergson, is really a form of space; the time which is of the essence of life is what he calls *duration.* This conception of duration is fundamental in his philosophy; it appears already in his earliest book *Time and Free Will,* and it is necessary to understand it if we are to have any comprehension of his system. It is, however, a very difficult conception. I do not fully understand it myself, and therefore I cannot hope to explain it with all the lucidity which it doubtless deserves.

"Pure duration," we are told, "is the form which our conscious states assume when our ego lets itself *live,* when it refrains from separating its present state from its former states" (*T. and F. W.*, p. 100). It forms the past and the present into one organic whole, where there is mutual penetration, succession without distinction (*ib.*). "Within our ego, there is succession without mutual externality; outside the ego, in pure space, there is mutual externality without succession" (p. 108).

"Questions relating to subject and object, to their distinction and their union, should be put in terms of time rather than of space" (*M. and M.*, p. 77). In the duration in which we *see ourselves acting,* there are dissociated elements; but in the duration in which we *act,* our states melt into each other (*M. and M.*, p. 243). Pure duration is what is most removed from externality and least penetrated with externality, a duration in which the past is big with a present absolutely new. But then our will is strained to the utmost; we have to gather up the past which is slipping away, and thrust it whole and undivided into the present. At such moments we truly possess ourselves, but such moments are rare (*C. E.*, pp. 210-211). Duration is

the very stuff of reality, which is perpetual becoming, never something made (*C. E.*, p. 287).

It is above all in *memory* that duration exhibits itself, for in memory the past survives in the present. Thus the theory of memory becomes of great importance in Bergson's philosophy. *Matter and Memory* is concerned to show the relation of mind and matter, of which both are affirmed to be real (p. vii), by an analysis of memory, which is "just the intersection of mind and matter" (p.xii).

There are, to begin with, two radically different things, both of which are commonly called *memory*; the clear distinction between these two is one of the best things in Bergson. "The past survives," he says, "under two distinct forms: first, in motor mechanisms; secondly, in independent recollections" (*M. and M.*, p. 87). For example, a man is said to remember a poem if he can repeat it by heart, that is to say, if he has acquired a certain habit or mechanism enabling him to repeat a former action. But he might, at least theoretically, be able to repeat the poem without any recollection of the previous occasions on which he has read it; thus there is no consciousness of past events involved in this sort of memory. The second sort, which alone really deserves to be called memory, is exhibited in recollections of separate occasions when he has read the poem, each unique and with a date. Here there can be no question of *habit,* since each event only occurred once, and had to make its impression immediately. It is suggested that in some way everything that has happened to us is remembered, but as a rule, only what is useful comes into consciousness. Apparent failures of memory, it is argued, are not really failures of the mental part of memory, but of the motor mechanism for bringing memory into action. This view is supported by a discussion of brain physiology and the facts of amnesia, from which it is held to result that true memory is not a function of the brain (*M. and M.*,

p. 315). The past must be *acted* by matter, *imagined* by mind (*M. and M.*, p. 298). Memory is not an emanation of matter; indeed the contrary would be nearer the truth if we mean matter as grasped in concrete perception, which always occupies a certain duration (*M. and M.*, p. 237).

"Memory must be, in principle, a power absolutely independent of matter. If, then, spirit is a reality, it is here, in the phenomena of memory, that we may come into touch with it experimentally" (*M. and M.*, p. 81).

At the opposite end from pure memory Bergson places pure perception, in regard to which he adopts an ultra-realist position. "In pure perception," he says, "we are actually placed outside ourselves, we touch the reality of the object in an immediate intuition" (p. 84). So completely does he identify perception with its object that he almost refuses to call it mental at all. "Pure perception," he says, "which is the lowest degree of mind—mind without memory—is really part of matter, as we understand matter" (*M. and M.*, p. 297). Pure perception is constituted by dawning action, its actuality lies in its activity (*M. and M.*, p. 74). It is in this way that the *brain* becomes relevant to perception, for the brain is not an instrument of representation, but an instrument of action (*M. anl M.*, p. 83). The function of the brain is to limit our mental life to what is practically useful. But for the brain, one gathers, everything would be perceived, but in fact we only perceive what interests us (cf. *M. and M.*, p. 34). "The body, always turned towards action, has for its essential function to limit, with a view to action, the life of the spirit" (*M. and M.*, p. 233). It is, in fact, an instrument of choice.

We must now return to the subject of instinct or intuition, as opposed to intellect. It was necessary first to give some account of duration and memory, since Bergson's theories of duration and memory are presupposed in his

account of intuition. In man, as he now exists, intuition is the fringe or penumbra of intellect: it has been thrust out of the center by being less useful in action than intellect, but it has deeper uses which make it desirable to bring it back into greater prominence. Bergson wishes to make intellect "turn inwards on itself, and awaken the potentialities of intuition which still slumber within it" (*C. E.*, p. 192). The relation between instinct and intellect is compared to that between sight and touch. Intellect, we are told, will not give knowledge of things at a distance; indeed the function of science is said to be to explain all perceptions in terms of touch.

"Instinct alone, he says, "is knowledge at a distance. It has the same relation to intelligence that vision has to touch" (*C. E.*, p. 177). We may observe in passing that, as appears in many passages, Bergson is a strong visualizer, whose thought is always conducted by means of visual images. Many things which he declares to be necessities of all thought are, I believe, characteristic of visualizers, and would not be true of those who think by means of auditory images. He always exalts the sense of sight at the expense of the other senses, and his views on space would seem to be largely determined by this fact. I shall return to this question at a later stage.

The essential characteristic of intuition is that it does not divide the world into separate things, as the intellect does; although Bergson does not use these words, we might describe it as synthetic rather than analytic. It apprehends a multiplicity, but a multiplicity of interpenetrating processes, not of spatially external bodies. There are in truth no *things*: "things and states are only views, taken by our mind, of becoming. There are no things, there are only actions" (*C. E.*, p. 261). This view of the world, which appears difficult and unnatural to intellect, is easy and natural to intuition. Memory affords an instance of what

is meant, for in memory the past lives on into the present and interpenetrates it. Apart from mind, the world would be perpetually dying and being born again; the past would have no reality, and therefore there would be no past. It is memory, with its correlative desire, that makes the past and the future real and therefore creates true duration and true time. Intuition alone can understand this mingling of past and future: to the intellect they remain external, spatially external as it were, to one another. Under the guidance of intuition, we perceive that "form is only a snapshot view of a transition" (*C. E.*, p. 319), and the philosopher "will see the material world melt back into a single flux" (*C. E.*, p. 390).

Closely connected with the merits of intuition is Bergson's doctrine of freedom and his praise of action. "In reality," he says, "a living being is a center of action. It represents a certain sum of contingency entering into the world, that is to say, a certain quantity of possible action" (*C. E.*, p. 276). The arguments against free will depend partly upon assuming that the intensity of psychical states is a *quantity,* capable, at least in theory, of numerical measurement; this view Bergson undertakes to refute in the first chapter of *Time and Free Will.* Partly the determinist depends, we are told, upon a confusion between true duration and mathematical time, which Bergson regards as really a form of space. Partly, again, the determinist rests his case upon the unwarranted assumption that, when the state of the brain is given, the state of the mind is theoretically determinate. Bergson is willing to admit that the converse is true, that is to say, that the state of brain is determinate when the state of mind is given, but he regards the mind as more differentiated than the brain, and therefore holds that many different states of mind may correspond to one state of brain. He concludes that real freedom is possible: "We are free when our acts spring from

our whole personality, when they express it, when they have that indefinable resemblance to it which one sometimes finds between the artist and his work" (*T. and F. W.*, p. 172).

In the above outline, I have in the main endeavored merely to state Bergson's views, without giving the reasons adduced by him in favor of their truth. This is easier than it would be with most philosophers, since as a rule he does not give reasons for his opinions, but relies on their inherent attractiveness, and on the charm of an excellent style. Like the advertisers of Oxo, he relies upon picturesque and varied statement, and an apparent explanation of many obscure facts. Analogies and similes, especially form a very large part of the whole process by which he recommends his views to the reader. The number of similes for life to be found in his works exceeds the number in any poet known to me. Life, he says, is like a shell bursting into fragments which are again shells (*C. E.*, p. 103). It is like a sheaf (*ib.*, p. 104). Initially, it was "a tendency to accumulate in a reservoir, as do especially the green parts of vegetables" (*ib.*, p. 260). But the reservoir is to be filled with boiling water from which steam is issuing; "jets must be gushing out unceasingly, of which each, falling back, is a world" (*ib.*, p. 261). Again "life appears in its entirety as an immense wave which, starting from a center, spreads outwards, and which on almost the whole of its circumference is stopped and converted into oscillation: at one single point the obstacle has been forced, the impulsion has passed freely" (*ib.*, p. 280). Then there is the great climax in which life is compared to a cavalry charge. "All organized beings, from the humblest to the highest, from the first origins of life to the time in which we are, and in all places as in all times, do but evidence a single impulsion, the inverse of the movement of matter, and in itself indivisible. All the living hold together, and

all yield to the same tremendous push. The animal takes its stand on the plant, man bestrides animality, and the whole of humanity, in space and in time, is one immense army galloping beside and before and behind each of us in an overwhelming charge able to beat down every resistance and to clear many obstacles, perhaps even death" (*C. E.*, pp. 285-6).

But a cool critic, who feels himself a mere spectator, perhaps an unsympathetic spectator, of the charge in which man is mounted upon animality, may be inclined to think that calm and careful thought is hardly compatible with this form of exercise. When he is told that thought is a mere means of action, the mere impulse to avoid obstacles in the field, he may feel that such a view is becoming in a cavalry officer, but not in a philosopher, whose business, after all, is with thought: he may feel that in the passion and noise of violent motion there is no room for the fainter music of reason, no leisure for the disinterested contemplation in which greatness is sought, not by turbulence, but by the greatness of the universe which is mirrored. In that case, he may be tempted to ask whether there are any reasons for accepting such a restless view of the world. And if he asks this question, he will find, if I am not mistaken, that there is no reason whatever for accepting this view, either in the universe or in the writings of M. Bergson.

II.

The two foundations of Bergson's philosophy, in so far as it is more than an imaginative and poetic view of the world, are his doctrines of space and time. His doctrine of space is required for his condemnation of the intellect, and if he fails in his condemnation of the intellect, the intellect will succeed in its condemnation of him, for between the two it is war to the knife. His doctrine of time is

necessary for his vindication of freedom, for his escape from what William James called a "block universe," for his doctrine of a perpetual flux in which there is nothing that flows, and for his whole account of the relations between mind and matter. It will be well, therefore, in criticism, to concentrate on these two doctrines. If they are true, such minor errors and inconsistencies as no philosopher escapes would not greatly matter, while if they are false, nothing remains except an imaginative epic, to be judged on esthetic rather than on intellectual grounds. I shall begin with the theory of space, as being the simpler of the two.

Bergson's theory of space occurs fully and explicitly in his *Time and Free Will,* and therefore belongs to the oldest parts of his philosophy. In his first chapter, he contends that *greater* and *less* imply space, since he regards the greater as essentially that which *contains* the less. He offers no arguments whatever, either good or bad, in favor of this view; he merely exclaims, as though he were giving an obvious *reductio ad absurdum*: "As if one could still speak of magnitude where there is neither multiplicity nor space!" (p. 9). The obvious cases to the contrary, such as pleasure and pain, afford him much difficulty, yet he never doubts or re-examines the dogma with which he starts.

In his next chapter, he maintains the same thesis as regards number. "As soon as we wish to picture *number* to ourselves," he says, "and not merely figures or words, we are compelled to have recourse to an extended image" (p. 78), and "every clear idea of number implies a visual image in space" (p. 79). These two sentences suffice to show, as I shall try to prove, that Bergson does not know what number is, and has himself no clear idea of it. This is shown also by his definition: "Number may be defined in general as a collection of units, or, speaking more exactly, as the synthesis of the one and the many" (p. 75).

In discussing these statements, I must ask the reader's patience for a moment while I call attention to some distinctions which may at first appear pedantic, but are really vital. There are three entirely different things which are confused by Bergson in the above statements, namely: (1) number, the general concept applicable to the various particular numbers; (2) the various particular numbers; (3) the various collections to which the various particular numbers are applicable. It is this last that is defined by Bergson when he says that number is a collection of units. The twelve apostles, the twelve tribes of Israel, the twelve months, the twelve signs of the zodiac, are all collections of units, yet no one of them is the number 12, still less is it number in general, as by the above definition it ought to be. The number 12, obviously, is something which all these collections have in common, but which they do not have in common with other collections, such as cricket elevens. Hence the number 12 is neither a collection of twelve terms, nor is it something which all collections have in common; and number in general is a property of 12 or 11 or any other number, but not of the various collections that have twelve terms or eleven terms.

Hence when, following Bergson's advice, we "have recourse to an extended image" and picture, say, twelve dots such as are obtained by throwing double sixes at dice, we have still not obtained a picture of the number 12. The number 12, in fact, is something more abstract than any picture. Before we can be said to have any understanding of the number 12, we must know what different collections of twelve units have in common, and this is something which cannot be pictured because it is abstract. Bergson only succeeds in making his theory of number plausible by confusing a particular collection with the number of its terms, and this again with number in general.

The confusion is the same as if we confused a particular

young man with youth, and youth with the general concept "period of human life," and were then to argue that because a young man has two legs, youth must have two legs, and the general concept "period of human life" must have two legs. The confusion is important because, as soon as it is perceived, the theory that number or particular numbers can be pictured in space is seen to be untenable. This not only disproves Bergson's theory as to number, but also his more general theory that all abstract ideas and all logic are derived from space; for the abstract 12, the common property of all dozens as opposed to any particular dozen, though it is never present to his mind, is obviously conceivable and obviously capable of being pictured in space.

But apart from the question of numbers, shall we admit Bergson's contention that every plurality of separate units involves space? Some of the cases that appear to contradict this view are considered by him, for example successive sounds. When we hear the steps of a passer-by in the street, he says, we visualize his successive positions; when we hear the strokes of a bell, we either picture it swinging backwards and forwards, or we range the successive sounds in an ideal space (*T. and F. W.*, p. 86). But these are mere autobiographical observations of a visualizer, and illustrate the remark we made before, that Bergson's views depend upon the predominance of the sense of sight in him. There is no logical necessity to range the strokes of a clock in an imaginary space: most people, I imagine, count them without any spatial auxiliary. Yet no reason is alleged by Bergson for the view that space is necessary. He assumes this as obvious, and proceeds at once to apply it to the case of times. Where there seem to be different times outside each other, he says, the times are pictured as spread out in space; in real time, such as is given by memory, different times interpenetrate each other, and cannot be counted because they are not separate.

The view that all separateness implies space is now supposed established, and is used deductively to prove that space is involved wherever there is obviously separateness, however little other reason there may be for suspecting such a thing. Thus abstract ideas, for example, obviously exclude each other: whiteness is different from blackness, health is different from sickness, folly is different from wisdom. Hence all abstract ideas involve space; and therefore logic, which uses abstract ideas, is an offshot of geometry, and the whole of the intellect depends upon a supposed habit of picturing things side by side in space. This conclusion, upon which Bergson's whole condemnation of the intellect rests, is based, so far as can be discovered, entirely upon a personal idiosyncrasy mistaken for a necessity of thought, I mean the idiosyncrasy of visualizing successions as spread out on a line. The instance of numbers shows that, if Bergson were in the right, we could never have attained to the abstract ideas which are supposed to be thus impregnated with space; and conversely, the fact that we can understand abstract ideas (as opposed to particular things which exemplify them) seems sufficient to prove that he is wrong in regarding the intellect as impregnated with space.

One of the bad effects of an anti-intellectual philosophy, such as that of Bergson, is that it thrives upon the errors and confusions of the intellect. Hence it is led to prefer bad thinking to good, to declare every momentary difficulty insoluble, and to regard every foolish mistake as revealing the bankruptcy of intellect and the triumph of intuition. There are in Bergson's works many allusions to mathematics and science, and to a careless reader these allusions may seem to strengthen his philosophy greatly. As regards science, especially biology and physiology, I am not competent to criticize his interpretations. But as regards mathematics, he has deliberately preferred traditional er-

rors in interpretation to the more modern views which have prevailed among mathematicians for the last half century. In this matter, he has followed the example of most philosophers. In the eighteenth and early nineteenth centuries, the infinitesimal calculus, though well developed as a method, was supported, as regards its foundations, by many fallacies and much confused thinking. Hegel and his followers seized upon these fallacies and confusions, to support them in their attempt to prove all mathematics self-contradictory. Thence the Hegelian account of these matters passed into the current thought of philosophers, where it has remained long after the mathematicians have removed all the difficulties upon which the philosophers rely. And so long as the main object of philosophers is to show that nothing can be learned by patience and detailed thinking, but that we ought rather to worship the prejudices of the ignorant under the title of "reason" if we are Hegelians, or of "intuition" if we are Bergsonians, so long philosophers will take care to remain ignorant of what mathematicians have done to remove the errors by which Hegel profited.

Apart from the question of number, which we have already considered, the chief point at which Bergson touches mathematics is his rejection of what he calls the "cinematographic" representation of the world. Mathematics conceives change, even continuous change, as constituted by a series of states; Bergson, on the contrary, contends that no series of states can represent what is continuous, and that in change a thing is never in any state at all. This view that change is constituted by a series of changing states he calls cinematographic; this view, he says, is natural to the intellect, but is radically vicious. True change can only be explained by true duration; it involves an interpenetration of past and present, not a mathematical succession of static states. This is what is called a "dynamic"

instead of a "static" view of the world. The question is important, and in spite of its difficulty we cannot pass it by.

Bergson's position is illustrated—and what is to be said in criticism may also be aptly illustrated—by Zeno's argument of the arrow. Zeno argues that, since the arrow at each moment simply is where it is, therefore the arrow in its flight is always at rest. At first sight, this argument may not appear a very powerful one. Of course, it will be said, the arrow is where it is at one moment, but at another moment it is somewhere else, and this is just what constitutes motion. Certain difficulties, it is true, arise out of the continuity of motion, if we insist upon assuming that motion is also discontinuous. These difficulties, thus obtained, have long been part of the stock-in-trade of philosophers. But if, with the mathematicians, we avoid the assumption that motion is also discontinuous, we shall not fall into the philosopher's difficulties. A cinematograph in which there are an infinite number of films, and in which there is never a *next* film because an infinite number come between any two, will perfectly represent a continuous motion. Wherein, then, lies the force of Zeno's argument?

Zeno belonged to the Eleatic school, whose object was to prove that there could be no such thing as change. The natural view to take of the world is that there are *things* which *change*; for example, there is an arrow which is now here, now there. By bisection of this view, philosophers have developed two paradoxes. The Eleatics said that there were things but no changes; Heraclitus and Bergson said that there were changes but no things. The Eleatics said there was an arrow, but no flight; Heraclitus and Bergson said there was a flight but no arrow. Each party conducted its argument by refutation of the other party. How ridiculous to say there is no arrow! say the "static" party. How ridiculous to say there is no flight! say the

"dynamic" party. The unfortunate man who stands in the middle and maintains that there is both the arrow and its flight is assumed by the disputants to deny both; he is therefore pierced, like St. Sebastian, by the arrow from one side and by its flight from the other. But we have still not discovered wherein lies the force of Zeno's argument.

Zeno assumes, tacitly, the essence of the Bergsonian theory of change. That is to say, he assumes that when a thing is in a process of continuous change, even if it is only change of position, there must be in the thing some internal *state* of change. The thing must, at each instant, be intrinsically different from what it would be if it were not changing. He then points out that at each instant the arrow simply is where it is, just as it would be if it were at rest. Hence he concludes that there can be no such thing as a *state* of motion, and therefore, adhering to the view that a state of motion is essential to motion, he infers that there can be no motion and that the arrow is always at rest.

Zeno's argument, therefore, though it does not touch the mathematical account of change, does, *prima facie,* refute a view of change which is not unlike M. Bergson's. How, then, does M. Bergson meet Zeno's argument? He meets it by denying that the arrow is ever anywhere. After stating Zeno's argument, he replies: "Yes, if we suppose that the arrow can ever *be* in a point of its course. Yes again, if the arrow, which is moving, ever coincides with a position, which is motionless. But the arrow never *is* in any point of its course" (*C. E.*., p. 325). This reply to Zeno, or a closely similar one concerning Achilles and the Tortoise, occurs in all his three books. Bergson's view, plainly, is paradoxical; whether it is *possible*, is a question which demands a discussion of his view of duration. His only argument in its favor is the statement that the mathematical view of change "implies the absurd proposition that movement is made of immobilities" (*C. E.*, p.

325). But the apparent absurdity of this view is merely due to the verbal form in which he has stated it, and vanishes as soon as we realize that motion implies relations. A friendship, for example, is made out of people who are friends, but not out of friendships; a genealogy is made out of men, but not out of genealogies. So a motion is made out of what is moving, but not out of motions. It expresses the fact that a thing may be in different places at different times, and that the places may still be different however near together the times may be. Bergson's argument against the mathematical view of motion, therefore, reduces itself, in the last analysis, to a mere play upon words. And with this conclusion we may pass on to a criticism of his theory of duration.

Bergson's theory of duration is bound up with his theory of memory. According to this theory, things remembered survive in memory, and thus interpenetrate present things: past and present are not mutually external, but are mingled in the unity of consciousness. Action, he says, is what constitutes being; but mathematical time is a mere passive receptacle, which does nothing and therefore is nothing (*C. E.*, p. 41). The past, he says, is that which acts no longer, and the present is that which is acting (*M. and M.*, p. 74). But in this statement, as indeed throughout his account of duration, Bergson is unconsciously assuming the ordinary mathematical time; without this, his statements are unmeaning. What is meant by saying "the past is essentially *that which acts no longer*" (his italics), except that the past is that of which the action is past? The words "no longer" are words expressive of the past; to a person who did not have the ordinary notion of the past as something outside the present, these words would have no meaning. Thus his definition is circular. What he says is, in effect, "the past is that of which the action is in the past." As a definition, this cannot be regarded as a happy effort.

And the same applies to the present. The present, we are told, is "*that which is acting*" (his italics).[3] But the word "is" introduces just that idea of the present which was to be defined. The present is that which *is* acting as opposed to that which *was* acting or *will be* acting. That is to say, the present is that whose action is in the present, not in the past or in the future. Again the definition is circular. An earlier passage on the same page will illustrate the fallacy further. "That which constitutes our pure perception," he says, "is our dawning action.... The *actuality* of our perception thus lies in its *activity,* in the movements which prolong it, and not in its greater intensity: the past is only idea, the present is ideo-motor" (*ib.*). This passage makes it quite clear that, when Bergson speaks of the past, he does not mean the past, but our present memory of the past. The past when it existed was just as active as the present is now; if Bergson's account were correct, the present moment ought to be the only one in the whole history of the world containing any activity.

In earlier times there were other perceptions, just as active, just as actual in their day, as our present perception; the past, in its day, was by no means only idea, but was in its intrinsic character just what the present is now. This real past, however, Bergson simply forgets; what he speaks of is the present idea of the past. The real past does not mingle with the present. Our memory of the past does of course mingle with the present, since it is part of it; but that is a very different thing.

The whole of Bergson's theory of duration and time rests throughout on the elementary confusion between the present occurrence of a recollection and the past occurrence which is recollected. But for the fact that time is so famil-

[3] Similarly in *Matter and Memory* (p. 193) he says it is a question whether the past has ceased to exist, or has only *ceased* to be useful. The present, he says, is not that which is, but that which *is* being made. The words I have italicized here really involve the usual view of time.

iar to us, the vicious circle involved in his attempt to deduce the past as what is no longer active would be obvious at once. As it is, what Bergson gives is an account of the difference between perception and recollection—both *present* facts—and what he believes himself to have given is an account of the difference between the present and the past. As soon as this confusion is realized, his theory of time is seen to be simply a theory which omits time altogether.

The confusion between present remembering and the past event remembered, which seems to be at the bottom of Bergson's theory of time, is an instance of a more general confusion which, if I am not mistaken, vitiates a great deal of his thought, and indeed a great deal of the thought of most modern philosophers—I mean the confusion between an act of knowing and that which is known. In memory, the act of knowing is in the present, whereas what is known is in the past; thus by confusing them the distinction between past and present is blurred. In perception, the act of knowing is mental, whereas what is known is (at least in one sense) physical or material; thus by confusing the two, the distinction between mind and matter is blurred. This enables Bergson to say, as we saw, that "pure perception, which is the lowest degree of mind.... is really part of matter." The act of perceiving is mind, while that which is perceived is (in one sense) matter; thus when these two are confused, the above statement becomes intelligible.

Throughout *Matter and Memory,* this confusion between the act of knowing and the object known is indispensable. It is enshrined in the use of the word "image," which is explained at the very beginning of the book.[4]

[4] Bergson's use of the word "image" is made clearer by a very penetrating analysis of Berkeley in a recent article, "L'Intuition Philosophique" (*Revue de Métaphysique et de Morale,* Nov. 1911). This article displays very distinctly the profound influence of Berkeley on Bergson's thought. Bergson's "image" is practically Berkeley's "idea."

He there states that, apart from philosophical theories, everything that we know consists of "images," which indeed constitute the whole universe. He says: "I call *matter* the aggregate of images, and *perception of matter* these same images referred to the eventual action of one particular image, my body" (*M. and M.*, p. 8). It will be observed that matter and the perception of matter, according to him, consist of the very same things. The brain, he says, is like the rest of the material universe, and is therefore an image if the universe is an image (p. 9).

Since the brain, which nobody sees, is not, in the ordinary sense, an image, we are not surprised at his saying that an image can *be* without *being perceived* (p. 27); but he explains later on that, as regards images, the difference between *being* and *being consciously perceived* is only one of degree (p. 30). This is perhaps explained by another passage in which he says: "What can be a non-perceived material object, an image not imaged, unless it is a kind of unconscious mental state?" (p. 183). Finally (p. 304) he says: "That every reality has a kinship, an analogy, in short a relation with consciousness—this is what we concede to idealism by the very fact that we term things 'images.'" Nevertheless he attempts to allay our initial doubt by saying that he is beginning at a point before any of the assumptions of philosophers have been introduced. "We will assume," he says, "for the moment that we know nothing of theories of matter and theories of spirit, nothing of the discussions as to the reality or ideality of the external world. Here I am in the presence of images" (p. 1). And in the new Introduction which he wrote for the English edition he says: "By 'image' we mean a certain existence which is more than that which the idealist calls a *representation,* but less than that which the realist calls a *thing,*—an existence placed halfway between the 'thing' and the 'representation'" (p. vii).

The distinction which Bergson has in mind in the above is not, I think, the distinction between the imaging as a mental occurrence and the thing imaged as an object. He is thinking of the distinction between the thing as it is and the thing as it appears, neither of which belongs to the subject. The distinction between subject and object, between the mind which thinks and remembers and has images on the one hand, and the objects thought about, remembered, or imaged—this distinction, so far as I can see, is wholly absent from his philosophy. Its absence is his real debt to idealism; and a very unfortunate debt it is. In the case of "images," as we have just seen, it enables him first to speak of images as neutral between mind and matter, then to assert that the brain is an image in spite of the fact that it has never been imaged, then to suggest that matter and the perception of matter are the same thing, but that a non-perceived image (such as the brain) is an unconscious mental state; while finally, the use of the word "image," though involving no metaphysical theories whatever, nevertheless implies that every reality has "a kinship, an analogy, in short a relation" with consciousness.

All these confusions are due to the initial confusion of subject and object. The subject—a thought or an image or a memory—is a present fact in me; the object may be the law of gravitation or my friend Jones or the old Campanile of Venice. The subject is mental and is here and now. Therefore, if subject and object are one, the object is mental and is here and now; my friend Jones, though he believes himself to be in South America and to exist on his own account, is really in my head and exists in virtue of my thinking about him; St. Mark's Campanile, in spite of its great size and the fact that it ceased to exist ten years ago, still exists, and is to be found complete inside me. These statements are no travesty of Bergson's theories of

space and time; they are merely an attempt to show what is the actual concrete meaning of those theories.

The confusion of subject and object is not peculiar to Bergson, but is common to many idealists and many materialists. Many idealists say that the object is really the subject, and many materialists say that the subject is really the object. They agree in thinking these two statements very different, while yet holding that subject and object are not different. In this respect, we may admit, Bergson has merit, for he is as ready impartially to identify subject with object as to identify object with subject. As soon as this identification is rejected, his whole system collapses: first his theories of space and time, then his belief in real contingency, then his condemnation of intellect, then his account of the relations of mind and matter, and last of all his whole view that the universe contains no things, but only actions, movements, changes, from nothing to nothing, in an endless alternation of up and down.

Of course a large part of Bergson's philosophy, probably the part to which most of its popularity is due, does not depend upon argument, and cannot be upset by argument. His imaginative picture of the world, regarded as a poetic effort, is in the main not capable of either proof or disproof. Shakespeare says life's but a walking shadow, Shelley says it is like a dome of many-colored glass, Bergson says it is a shell which bursts into parts that are again shells. If you like Bergson's image better, it is just as legitimate.

The good which Bergson hopes to see realized in the world is action for the sake of action. All pure contemplation he calls "dreaming," and condemns by a whole series of uncomplimentary epithets: static, Platonic, mathematical, logical, intellectual. Those who desire some prevision of the end which action is to achieve are told that an end foreseen would be nothing new, because desire, like mem-

ory, is identified with its object. Thus we are condemned, in action, to be the blind slaves of instinct: the life-force pushes us on from behind, restlessly and unceasingly. There is no room in this philosophy for the moment of contemplative insight when, rising above the animal life, we become conscious of the greater ends that redeem man from the life of the brutes. Those to whom activity without purpose seems a sufficient good will find in Bergson's books a pleasing picture of the universe. But those to whom action, if it is to be of any value, must be inspired by some vision, by some imaginative foreshadowing of a world less painful, less unjust, less full of strife than the world of our every-day life, those, in a word, whose action is built on contemplation, will find in this philosophy nothing of what they seek, and will not regret that there is no reason to think it true.

B. RUSSELL.

CAMBRIDGE, ENGLAND.